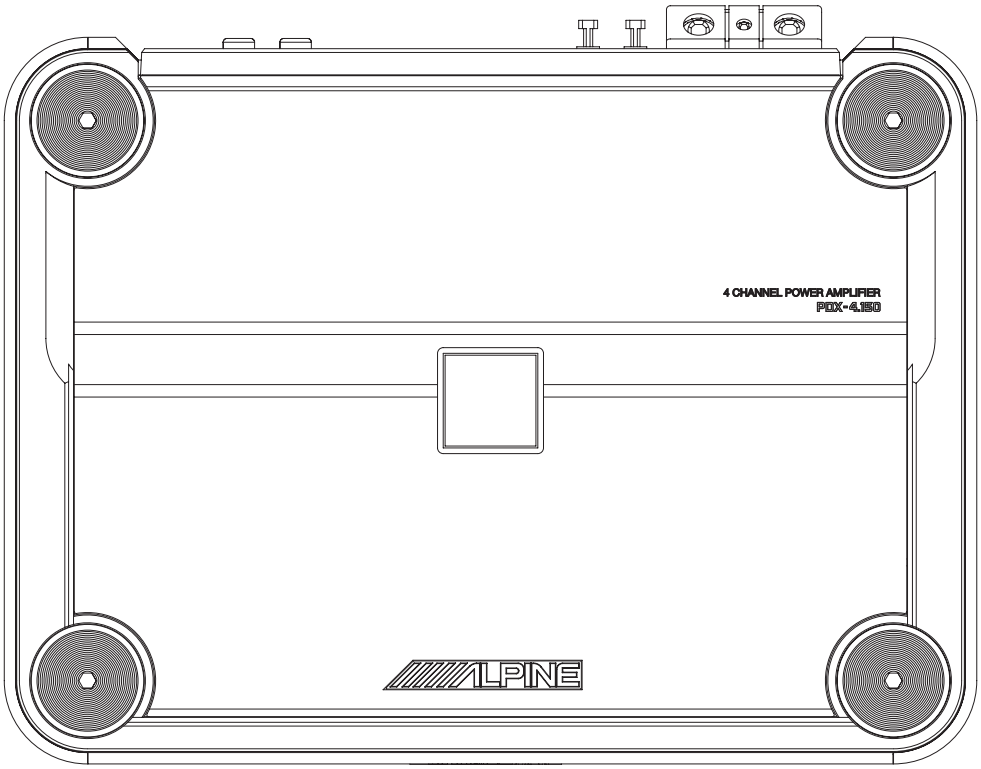
ALPINE

SERVICE MANUAL

4 CHANNEL POWER AMPLIFIER

Caution : The part marked with ⚠ is generating a high voltage, so care will be necessary when working.



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A06001

PDX-4.150

<Cautions for Safe Repair Work>

The following cautions will prevent accidents in the workplace and will ensure safe products.
*The symbols indicate caution is needed to prevent injuries and damage to property.
The symbols and their meanings follow.

Warning	If you ignore this symbol and handle the product incorrectly or unsafely, serious injury or death may result.
Caution	If you ignore this symbol and handle the product incorrectly or unsafely, injury or only material damage may result.

*The following symbols indicate two levels of cautions.

	When you see this symbol, you have to be very careful.
	When you see this symbol, you have to follow the instructions there.

Warning

Do not look squarely into the laser light coming from the pickup. You may loose you sight.	**Fuse Caution** Always use a designated fuse. Use of an incorrect fuse may result in a fire.

Caution

Do not allow wiring to be caught in the screw/chassis. If wiring is caught in the screw/chassis, it may cause a short circuit, resulting in a fire.	**Battery Caution** Use the designated battery. Confirm the correct polarity and seat of the battery. An incorrect battery or an improperly connected or seated battery may result in a fire.
High Temperature Caution Touching the heat sink may cause severe burns.	**Designated Parts Caution** Look up the part list and ensure that only designated parts are used to prevent problems or accidents.
Reverse Power Supply Connections or Misconnections Caution Reverse power supply connections or misconnections may cause ignition problems and smoke may result.	**Wiring Caution** Ensure that the wiring is correct when rewiring to prevent problems with ignition/breakdown.
Soldering Caution Hot solder from solder splash may cause severe burns.	**Wear Gloves** Wear gloves to prevent electrical shocks or injury from the end face of the metal.

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NOTE : Due to continuing product improvement, specifications and designs are subject to change without notice.

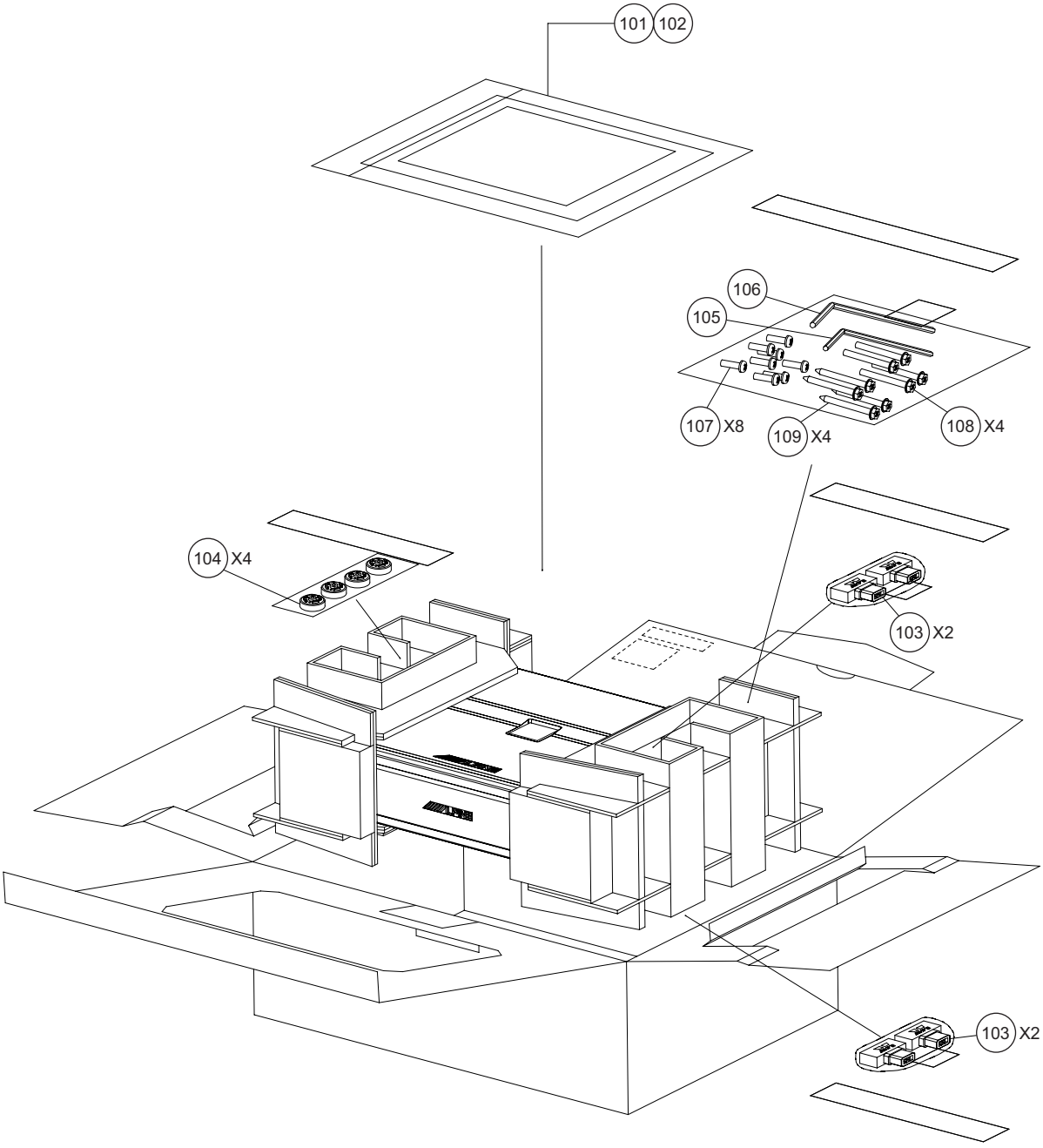
Packing Assembly Parts List

Symbol No.	Part No.	Description
#1 101	68-05946Z09	MANUAL,OWNER'S(AO)
$1 101	68-05946Z10	MANUAL,OWNER'S-GO
%1 101	68-05946Z10	MANUAL,OWNER'S-GO
&1 101	68-05946Z28	O/M AOCH
$1 102	68-05946Z11	MANUAL,OWNER'S-IGS
103	09E39816S01	CONN,PLUG 2P
104	42E39219S01	JOINT,TOP

Symbol No.	Part No.	Description
105	03E36691S01	WRENCH,2X2.3
106	03E36692S01	WRENCH,4X4.6
107	03E39493S01	SCR,M2.6X14(P)(WHT)
108	03E39500S01	SCR,M4X36(WSP)(BLK)
109	03E39508S01	SCR,M4X40(WP)(BLK)

NOTE : #1 : For North American Model Only, $1 : For European Model Only, %1 : For General Foreign Model Only,
&1 : For Chinese Model Only, Others : Common.

Packing Method View



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Specifications

Power Output	20Hz, 4ohm, 1.0% T.H.D. (14.4V)	150W
	1kHz, 4ohm, 1.0% T.H.D. (14.4V)	150W
T.H.D. (1kHz, 10W/ 4ohm (14.4V))		0.5%
Residual Noise (Input Short)		10mV
S/N Ratio (Ref.Output 150W/ 4ohm, Input Short)		85dB
Frequency Response (Ref.Output 1W/ 4ohm, Ref.Frequency 1kHz)		20Hz : -0.5±2dB 20kHz : -0.5±2dB
Output Offset Voltage (No Signal)		±150mV
Remote On Voltage (1W Output)		6.4±1V
Current Drain	(1) No Signal	2.0A
	(2) Remote Current Drain	0.36±0.2mA
	(3) Back Up Current Drain	1.2mA
Input Sensitivity (Ref.Output 150W/ 4ohm, 1kHz) (Input sensitive volume position : MAX)		0.2V±3dB
Input Impedance (Reference)		CH1,3 : 28.6Kohm±10% CH2,4 : 23.1Kohm±10%
X-OVER Filter Characteristic	(1) VR 30Hz Position at 30Hz (LPF) REF. Output 1W/ 4ohm, 1kHz	-3dB +2dB -5dB
	(2) VR 400Hz Position at 400Hz (LPF) REF. Output 1W/ 4ohm, 1kHz	-3dB +2dB -5dB
	(3) VR 30Hz Position at 30Hz (HPF) REF. Output 1W/ 4ohm, 1kHz	-3dB +2dB -5dB
	(4) VR 400Hz Position at 400Hz (HPF) REF. Output 1W/ 4ohm, 1kHz	-3dB +2dB -5dB
Fuse Requirement		30A(Peak) x 2 (For Battery Line)
Power Source		DC14.4V (11 to 16V)
Dimensions (W x H x D)		257 x 62 x 192mm
Weight		3.11kg

NOTE : Due to Continuing product improvement, specifications and designs are subject to change without notice.

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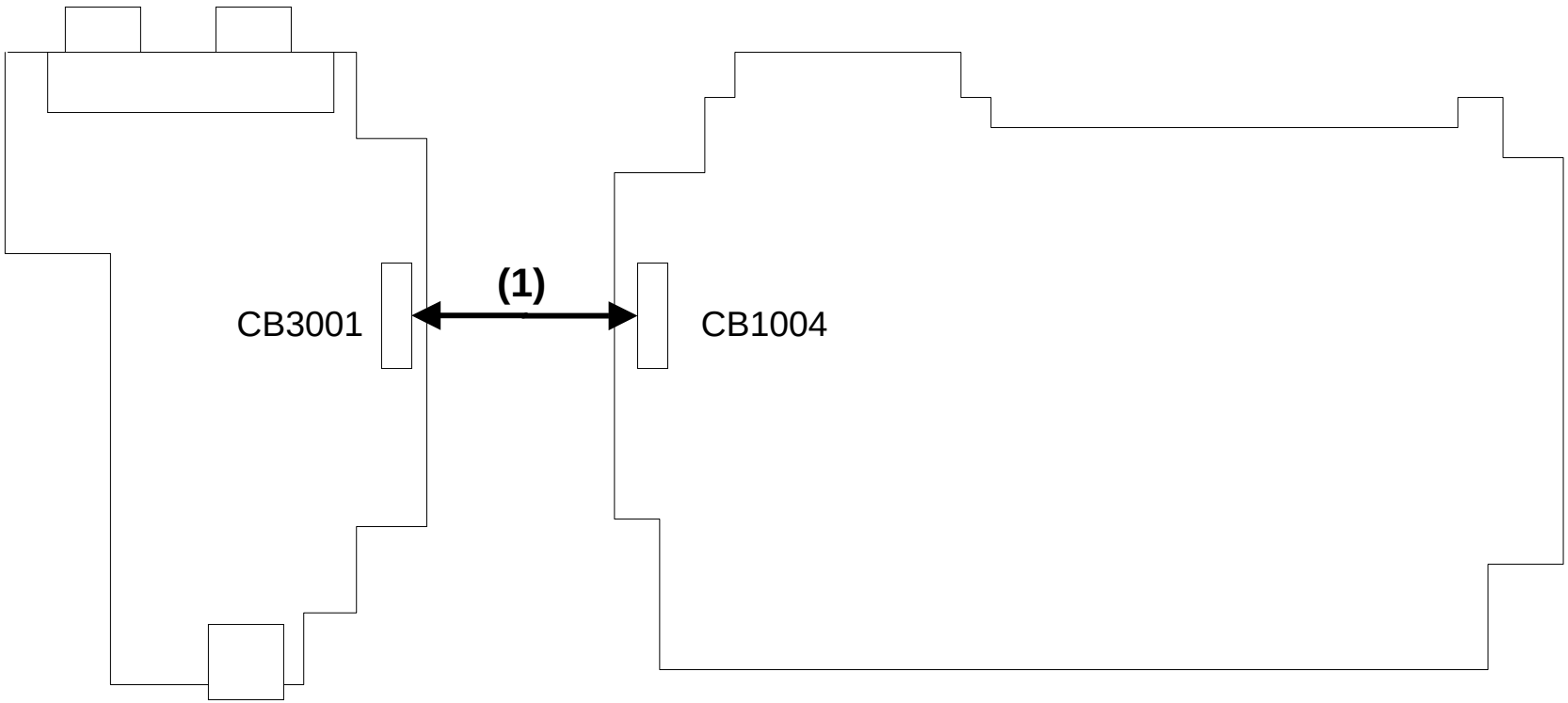
Extension Cable

*Always connect the Extension Cable when making checks of voltage and repair.



(1) 01E39870S01

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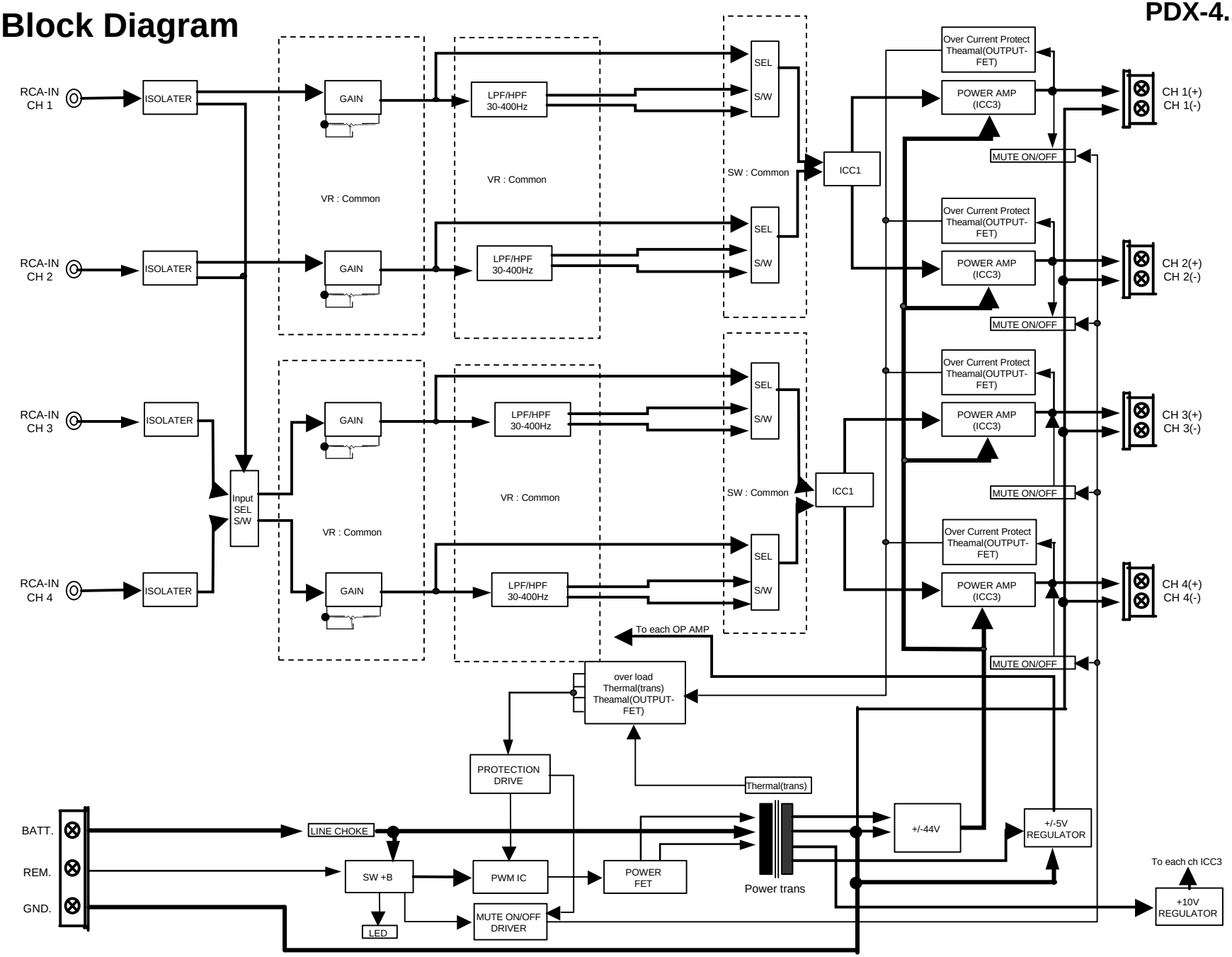
Block Diagram



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Parts Layout on P.W.Boards and Wiring Diagram (1/3)

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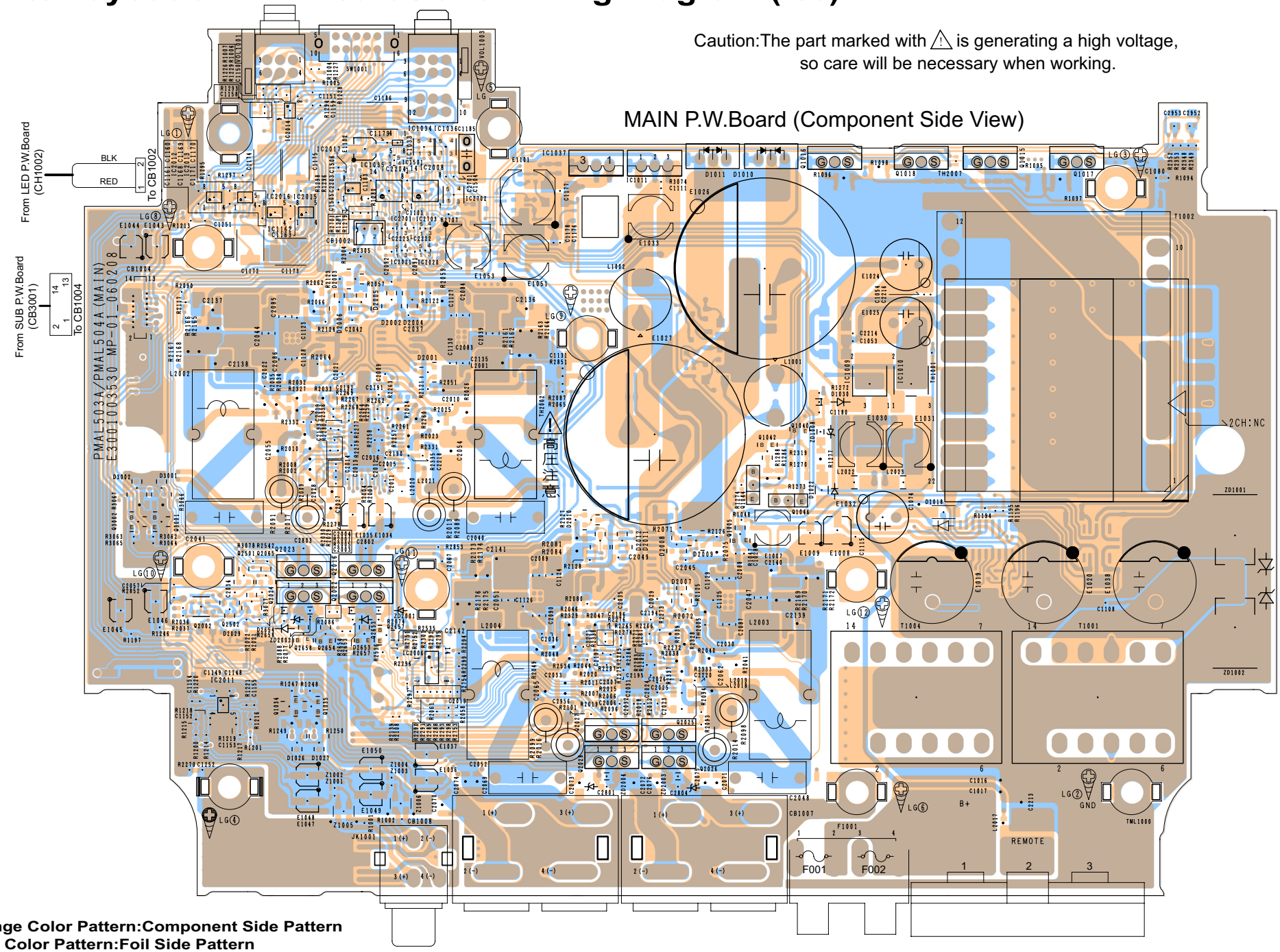
Caution:The part marked with ⚠ is generating a high voltage, so care will be necessary when working.

MAIN P.W.Board (Component Side View)



Orange Color Pattern:Component Side Pattern
Blue Color Pattern:Foil Side Pattern

Parts Layout on P.W.Boards and Wiring Diagram (2/3)

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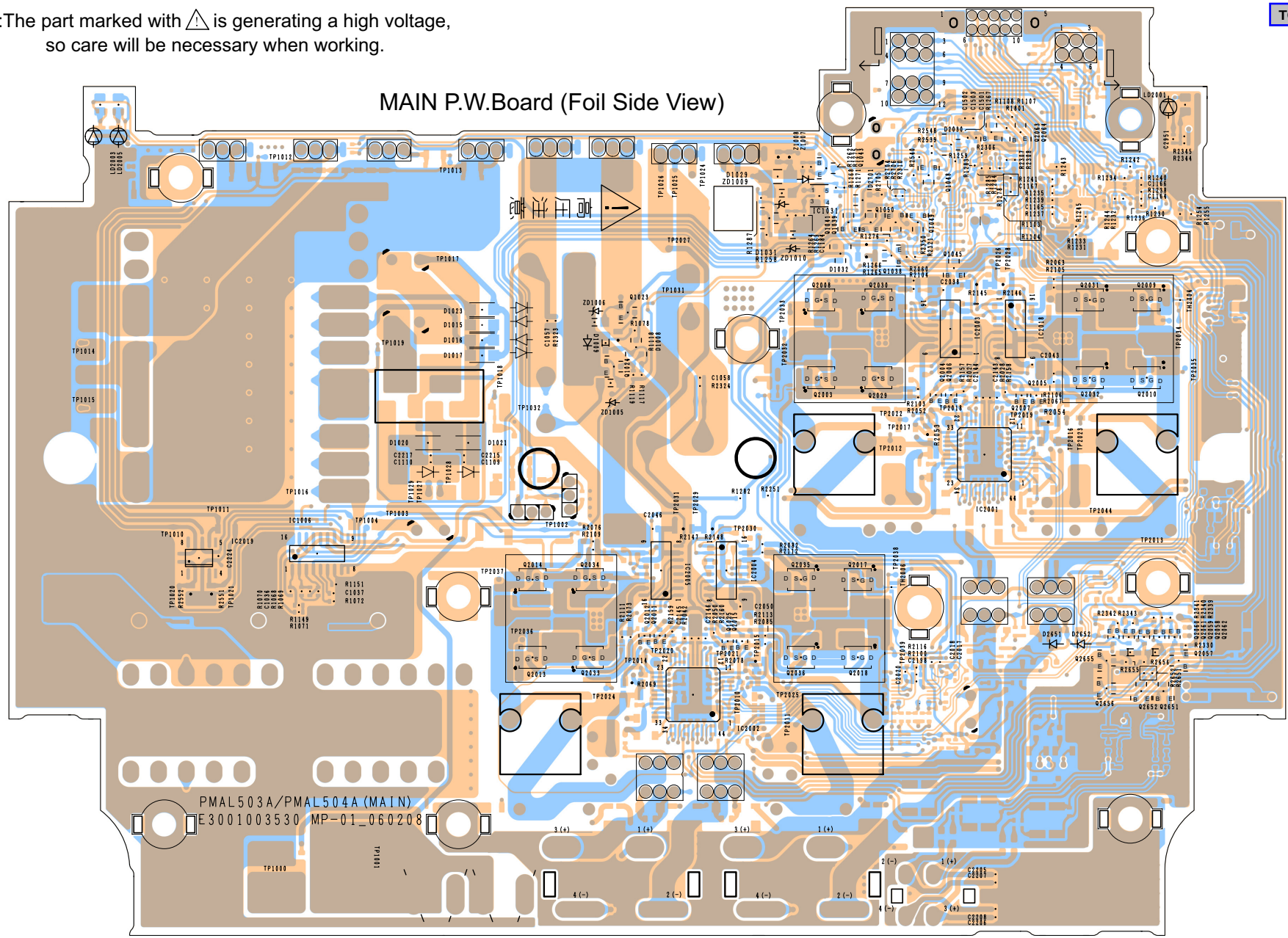
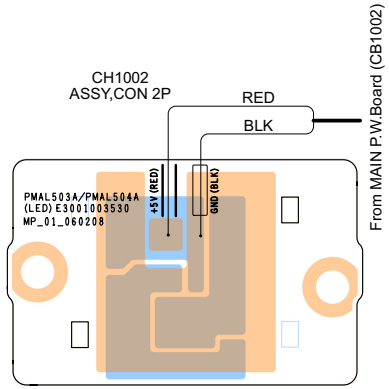
Caution:The part marked with ⚠ is generating a high voltage, so care will be necessary when working.

MAIN P.W.Board (Foil Side View)

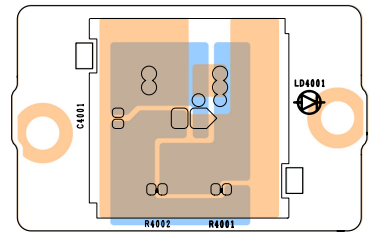


Orange Color Pattern:Component Side Pattern
Blue Color Pattern:Foil Side Pattern

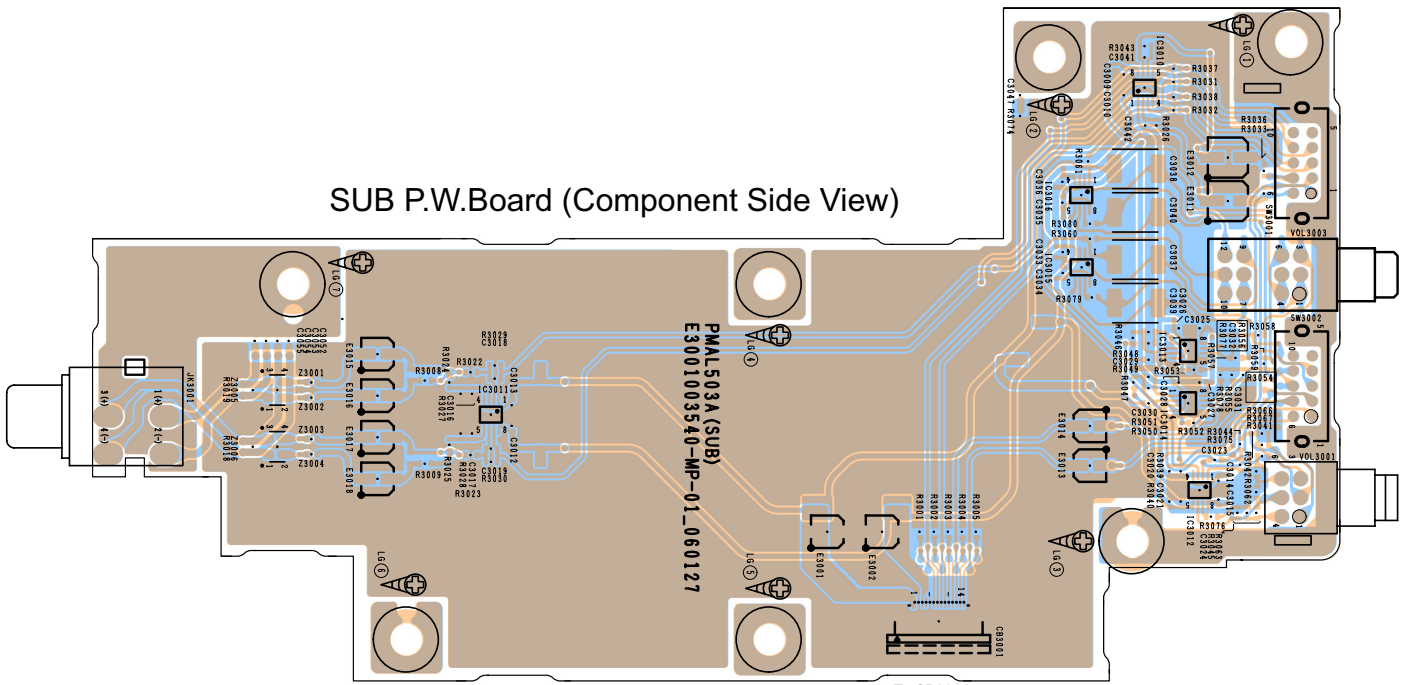
Parts Layout on P.W.Boards and Wiring Diagram (3/3)



LED P.W.Board (Component Side View)



SUB P.W.Board (Component Side View)



Orange Color Pattern:Component Side Pattern
Blue Color Pattern:Foil Side Pattern

Schematic Diagram(1/4)

Caution:The part marked with ⚠ is generating a high voltage,
so care will be necessary when working.

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ICE Enable CONTROL

POP KILL CONTROL

PROTECTION CONTROL

ICE ENABLE TIMING CONTROL

MUTE TIMING CONTROL

PROTECTION TIMING CONTROL

UNDER VOLTAGE PROTECTION

TRANS THERMAL PROTECTION

POWER FET THERMAL PROTECTION

B-DET

SW+5V

SW+B

RED LED

BLUE LED(TOP)

POWER FET

BLUE LED(FRONT)

PWM DRIVER+B

PWM DRIVER CONTROL

PWR DRIVER IC

POWER FET

+/- 5V REGULATOR

VSS+10V REGULATOR

MUTE

MAIN P.W.Board(1/3)
NOTE:N.U.is Not Used Parts.

TO P. W. BOARD
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Schematic Diagram(2/4)

Caution:The part marked with ⚠ is generating a high voltage, so care will be necessary when working.

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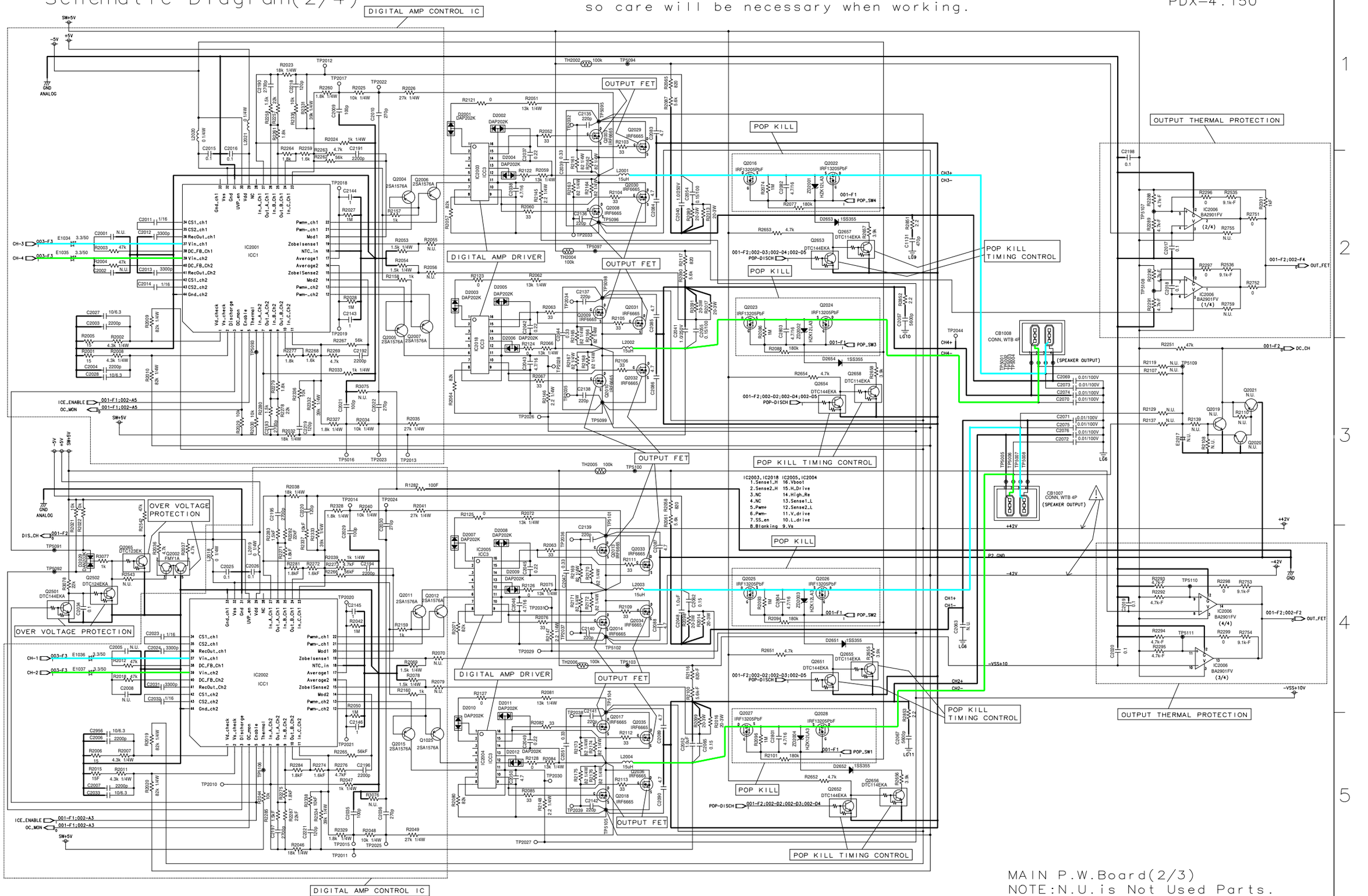

TO P. W. BOARD
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Schematic Diagram(3/4)

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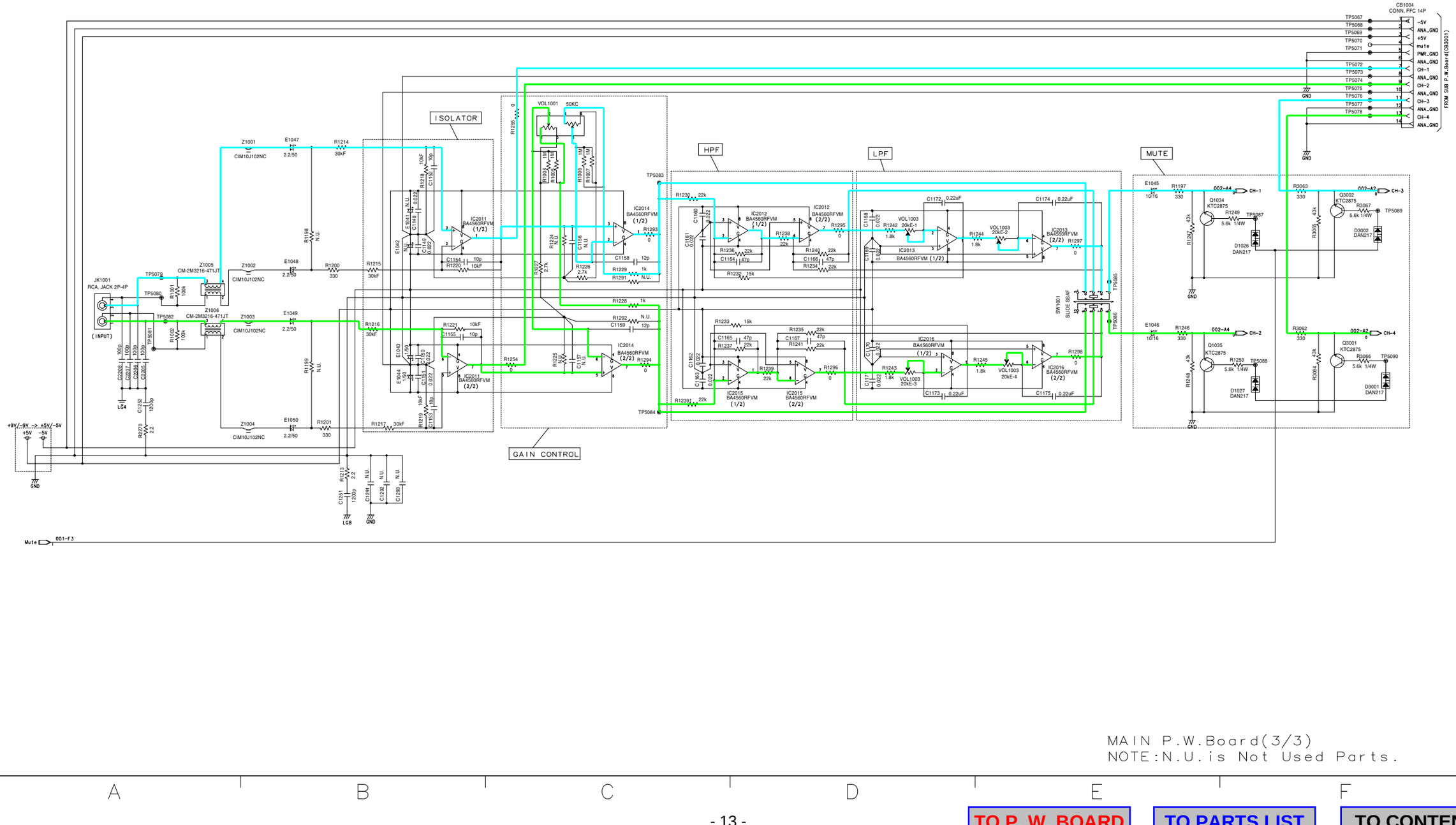

TO P. W. BOARD
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Schematic Diagram(4/4)

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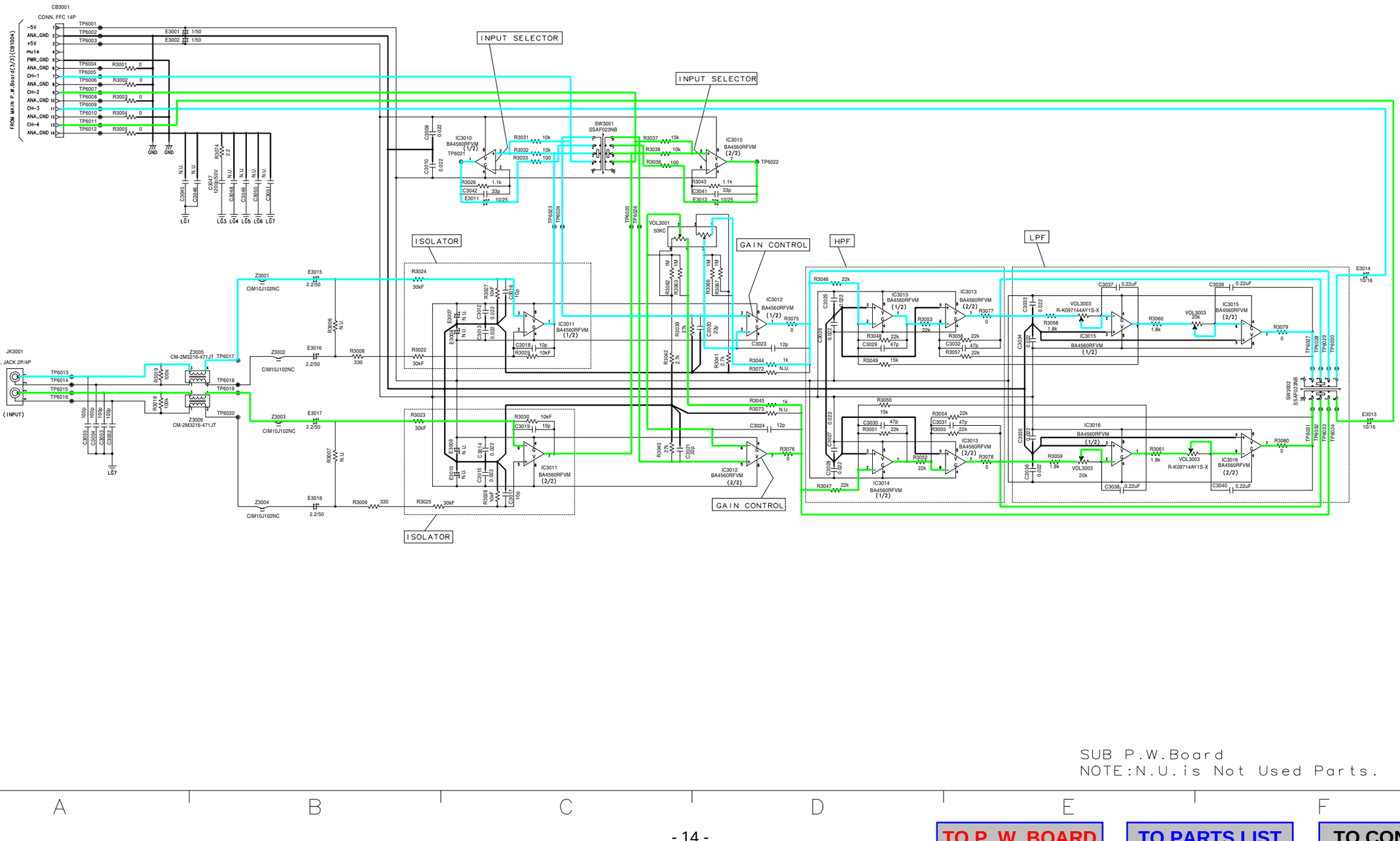

TO P. W. BOARD
TO PARTS LIST
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Terminal Voltage of IC/TR

REF NO.	1	2	3	4	5	6	7	8
IC1006	2.11	2.11	3.60	0	1.52	3.62	0	14.36
	9	10	11	12	13	14	15	16
	0.27	0.22	14.36	14.36	4.97	4.97	4.97	0

REF NO.	1	2	3
IC1009	10.85	0	5.06

REF NO.	1	2	3
IC1010	0	-10.91	-5.02

REF NO.	1	2	3
IC1011	-27.01	-44.20	-34.00

REF NO.	1	2	3	4	5
IC1031	5.08	7.99	0	NC	NC

REF NO.	1	2	3	4	5	6	7	8
IC1033	0	5.08	5.09	0	0	5.02	5.09	5.09

REF NO.	1	2	3	4	5
IC1034	2.98	4.89	0	NC	2.42

REF NO.	1	2	3	4	5	6	7
IC1035	5.08	5.09	5.06	5.09	4.31	5.09	0
	9	10	11	12	13	14	15
	5.03	5.09	5.03	0	5.09	5.06	5.09

REF NO.	1	2	3	4	5
IC1036	4.29	4.89	0	NC	2.43

REF NO.	1	2	3
IC1037	13.46	0	5.09

REF NO.	1	2	3	4	5
IC1501	NC	5.09	0	0	5.09

TO SCHEMATIC TO CONTENTS

REF NO.	1	2	3	4	5	6	7	8	9
IC2001	2.23	-2.21	-4.2	5.08	4.24	5.08	0	0	0
	10	11	12	13	14	15	16	17	18
	0	0	-4.43	-4.43	0	0	-0.14	-0.14	0
	19	20	21	22	23	24	25	26	27
	0	0	-4.44	-4.44	0	0	0	0	0
	28	29	30	31	32	33	34	35	36
	0	-5.02	-5.00	0	-4.99	0	-0.83	0	0
	37	38	39	40	41	42	43	44	
	0	-0.20	0	-0.20	0	-0.73	0	0	

REF NO.	1	2	3	4	5	6	7	8	9
IC2002	2.23	-2.21	-4.2	5.08	4.24	5.08	0	0	0
	10	11	12	13	14	15	16	17	18
	0	0	-4.43	-4.43	0	0	-0.14	-0.14	0
	19	20	21	22	23	24	25	26	27
	0	0	-4.44	-4.44	0	0	0	0	0
	28	29	30	31	32	33	34	35	36
	0	-5.02	-5.00	0	-4.99	0	-0.83	0	0
	37	38	39	40	41	42	43	44	
	0	-0.20	0	-0.20	0	-0.73	0	0	

REF NO.	1	2	3	4	5	6	7	8
IC2003	9.58	9.12	0	0	-41.50	-41.30	-34.00	-39.00
	9	10	11	12	13	14	15	16
	-44.20	-39.50	-34.00	-42.90	-42.50	-5.00	-17.30	-3.70

REF NO.	1	2	3	4	5	6	7	8
IC2004	8.90	8.54	0	0	-41.40	-41.30	-34.00	-39.10
	9	10	11	12	13	14	15	16
	-44.20	-39.50	-34.00	-42.90	-42.50	-10.00	-24.90	-1.70

REF NO.	1	2	3	4	5	6	7	8
IC2005	9.58	9.12	0	0	-41.50	-41.30	-34.00	-39.00
	9	10	11	12	13	14	15	16
	-44.20	-39.50	-34.00	-42.90	-42.50	-5.00	-17.30	-3.70

REF NO.	1	2	3	4	5	6	7
IC2006	4.31	4.31	5.09	0.40	2.90	0.36	2.90
	8	9	10	11	12	13	14
	0.39	2.90	0.40	2.90	0	4.31	4.31

REF NO.	1	2	3	4	5	6	7
IC2008	5.02	5.03	5.06	5.03	0	0	0
	8	9	10	11	12	13	14
	5.09	5.08	5.02	5.02	5.05	5.05	5.09

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REF NO.	1	2	3	4	5	6	7	8
IC2011	0	0	0	-5.00	0	0	0	5.04

REF NO.	1	2	3	4	5	6	7	8
IC2012	0	0	0	-5.00	0	0	0	5.04

REF NO.	1	2	3	4	5	6	7	8
IC2013	0	0	0	-5.00	0	0	0	5.04

REF NO.	1	2	3	4	5	6	7	8
IC2014	0	0	0	-5.00	0	0	0	5.04

REF NO.	1	2	3	4	5	6	7	8
IC2015	0	0	0	-5.00	0	0	0	5.04

REF NO.	1	2	3	4	5	6	7	8
IC2016	0	0	0	-5.00	0	0	0	5.04

REF NO.	1	2	3	4	5	6	7	8
IC2017	4.31	0.35	2.90	0	2.25	4.66	0.05	5.09

REF NO.	1	2	3	4	5	6	7	8
IC2018	8.90	8.54	0	0	-41.40	-41.30	-34.00	-39.10
	9	10	11	12	13	14	15	16
	-44.20	-39.50	-34.00	-42.90	-42.50	-10.00	-24.90	-1.70

REF NO.	1	2	3	4	5	6	7	8
IC2019	0	0.22	0	0.27	0.49	14.36	0.44	0

REF NO.	1	2	3	4	5
IC2020	NC	5.00	0	0	5.09

REF NO.	1	2	3	4	5
IC2021	5.09	0	0	5.09	5.09

REF NO.	1	2	3	4	5
IC2701	NC	0.05	0	5.09	5.09

REF NO.	1	2	3	4	5
IC2702	5.08	4.36	0	NC	2.12

REF NO.	1	2	3	4	5
IC2703	0.14	5.08	0	5.09	5.09

TO SCHEMATIC TO CONTENTS

REF NO.	1	2	3	4	5	6	7	8
IC3010	0	0	0	-5.00	0	0	0	5.04

REF NO.	1	2	3	4	5	6	7	8
IC3011	0	0	0	-5.00	0	0	0	5.04

REF NO.	1	2	3	4	5	6	7	8
IC3012	0	0	0	-5.00	0	0	0	5.04

REF NO.	1	2	3	4	5	6	7	8
IC3013	0	0	0	-5.00	0	0	0	5.04

REF NO.	1	2	3	4	5	6	7	8
IC3014	0	0	0	-5.00	0	0	0	5.04

REF NO.	1	2	3	4	5	6	7	8
IC3015	0	0	0	-5.00	0	0	0	5.04

REF NO.	1	2	3	4	5	6	7	8
IC3016	0	0	0	-5.00	0	0	0	5.04

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REF NO.	E	C	B
Q1005	4.97	0	5.03
Q1023	-44.20	-44.20	-15.00
Q1024	0	0	29.90
Q1025	-4.40	-41.30	-4.90
Q1034	0	0	-0.55
Q1035	0	0	-0.49
Q1038	0	0.03	0.60
Q1039	0	14.33	0.03
Q1040	0	0.06	0.68
Q1041	14.38	-0.38	14.35
Q1042	0	0.05	5.02
Q1043	0	5.06	0
Q1044	14.37	14.32	13.64
Q1045	0	0	5.02
Q1046	14.38	14.35	13.66
Q1048	0	0	5.03
Q1049	0	0.03	5.06
Q1050	0	3.67	0
Q2004	-4.40	-41.30	-4.90
Q2005	-4.40	-41.30	-4.90
Q2006	-4.40	-41.30	-4.90
Q2007	-4.40	-41.30	-4.90
Q2011	-4.40	-41.30	-4.90
Q2012	-4.40	-41.30	-4.90
Q2015	-4.40	-41.30	-4.90
Q2057	2.41	41.90	2.99
Q2058	42.00	12.50	42.60
Q2059	42.00	12.30	42.60
Q2060	42.00	12.40	42.60
Q2061	42.00	12.40	42.60
Q2062	42.00	42.00	42.50
Q2063	0	0	3.00
Q2064	0	4.24	0.02
Q2065	0	5.06	0
Q2501	0	0	4.24
Q2502	0	0	0
Q2651	0	0.05	2.99
Q2652	0	0.05	2.99
Q2653	0	0.05	2.99
Q2654	0	0.05	2.99
Q2655	0	12.91	0.05
Q2656	0	12.89	0.05
Q2657	0	13.28	0.05
Q2658	0	13.40	0.05
Q3001	0	0	-0.52
Q3002	0	0	-0.54

REF NO.	G	D	S
Q1015	0.48	14.40	0
Q1016	0.49	14.42	0
Q1017	0.48	14.40	0
Q1018	0.49	14.42	0
Q2003	12.35	44.9	7.09
Q2008	-39.40	7.09	-44.20
Q2009	12.15	44.9	8.05
Q2010	-39.40	8.05	-44.2
Q2013	12.35	44.90	7.09
Q2014	-39.40	7.09	-44.20
Q2016	12.44	0	0
Q2017	12.15	44.90	8.05
Q2018	-39.40	8.05	-44.20
Q2022	12.44	0	0
Q2023	12.46	0	0
Q2024	12.46	0	0
Q2025	12.40	0	0
Q2026	12.40	0	0
Q2027	12.58	0	0
Q2028	12.58	0	0
Q2029	12.40	44.90	7.09
Q2030	-39.40	7.09	-44.20
Q2031	12.15	44.90	8.05
Q2032	-39.40	8.05	-44.20
Q2033	12.40	44.90	7.09
Q2034	-39.40	7.09	-44.20
Q2035	12.15	44.90	8.05
Q2036	-39.40	8.05	-44.20

[Measuring Conditions]

1. Power Supply Voltage : DC 14.4V
2. Measuring Meter : Digital Multi Voltmeter
3. Measuring Point Reference : Between GND
4. Measuring Condition : No Signal Input

REF NO.	1	2	3	4	5
Q2002	-5.00	5.03	-0.40	-0.74	0

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Exploded View (Cabinet)

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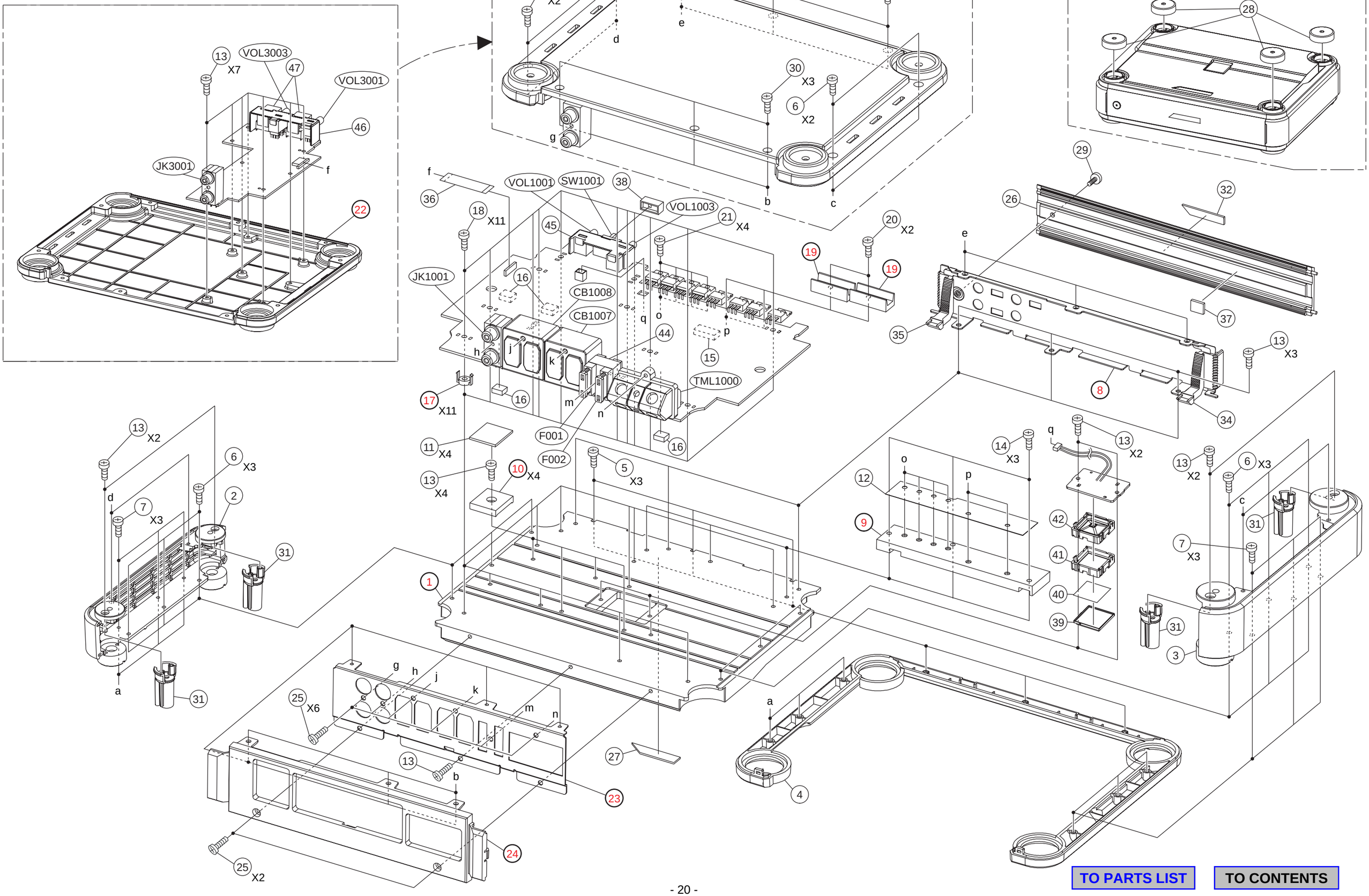

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